**CALIFORNIA MARINE LIFE PROTECTION ACT INITIATIVE**
**MASTER PLAN SCIENCE ADVISORY TEAM**
**AUGUST 30, 2005 MEETING SUMMARY**
**Ludwick Community Center**
**864 Santa Rosa Street**
**San Luis Obispo, California 93401**

**SAT members present:** Mark Carr, Doyle Hanan, Rikk Kvitek, Steven Murray, Linwood Pendleton, Kenneth Schiff, Astrid Scholz, Dean Wendt

**SAT members not present:** Loo Botsford, Steve Gaines , Mark Ohman, Jeff Paduan, Stephen Palumbi, Kevin Piner, Susan Schlosser, Rick Starr, William Sydeman, Mary Yoklavich, Richard Young

**Others present:** Satie Airame (guest speaker, Partnership for Interdisciplinary Studies of Coastal Oceans - PISCO); Steve Barrager (SAT Chair), Michael DeLapa (MLPA staff), Heather Galindo (note taker; SAT support staff), Dr. Mary Gleason (MLPA staff), John J. Kirlin (MLPA staff), John Ugoretz (DFG staff) and approximately seven members of the public

**Acronyms used:** California Department of Fish and Game (DFG); geographic information system (GIS); marine protected area (MPA); MLPA Blue Ribbon Task Force (BRTF); MLPA Central Coast Regional Stakeholder Group (CCRSG); MLPA Master Plan Framework (MPF), MLPA Master Plan Science Advisory Team (SAT)

## Introductions, Welcome and Agenda Review

Chair Steve Barrager reviewed the agenda and thanked those who filled in during his absence. He then asked that agenda items take up less time than allotted to have time to discuss the CCRSG regional goals and objectives. MLPA Initiative Executive Director John Kirlin also welcomed everyone and thanked them for their work since the last SAT meeting.

John Ugoretz announced the next set of SAT presentations would be at the September 28-29, 2005 BRTF meeting. He also announced that the Fish and Game Commission unanimously adopted the MPF on August 18, 2005, including all of the sections involving SAT guidance. References to the appropriate scientific literature were added to sections contributed by the SAT. Although adopted, the MPF will remain a flexible document and suggestions for improvement will be considered. A discussion of overall peer review will be required as the process moves forward.

## Revised SAT Guidelines

Steve Murray and Heather Galindo outlined the major changes to the SAT guidelines since the last SAT meeting. These included trying to make the document more generic as to apply to interactions between the SAT and all regional stakeholder groups, rearranging text, and clarifying the process of requesting information from SAT members at regional stakeholder

group meetings. Steve Murray went on to raise three major suggested changes to the guidelines that warranted open discussion before the changes were made:

- Clarify the process by which the SAT develops its recommendations
    - Discussion of whether the SAT should have recorded votes when approving recommendations and documents
    - Some thought recorded votes unnecessary since all recommendations are to be based on sound science and are therefore not a matter of opinion.
- Identifying how minority opinions on the SAT will be represented
    - All scientifically sound alternatives should be presented to the BRTF
    - SAT members should be explicit when expressing a view that does not represent the consensus of the SAT
- When making recommendations, determining whether SAT members should abstain from speaking unless speaking on behalf of the whole SAT
    - Recommendations to the BRTF should represent the views of the SAT as a whole and not that of an individual member
    - Some discussion of removing the sentence regarding this issue from the guidelines
    - Concern that some recommendations have previously gone to the CCRSG or BRTF that did not represent the whole SAT, especially given that a vote was not taken (examples include the sizing of MPAs based on larval transport and defining biogeographic regions)

The SAT guidelines were adopted with the intention to draft amendments as follows:

- When substantive decisions or recommendations are made. the SAT shall ensure that all members support the action taken. Where available science presents either options or uncertainty, the SAT shall frame and refer those policy questions to the BRTF.
- Outline a process by which tools needed for evaluation by the SAT are developed.
- Further clarify that requests for information from the SAT be restricted to the MLPA website and CCRSG meetings.
- Remove the term “spatial” when referring to MPAs.

**CCRSG Regional Goals and Objectives**

John Ugoretz explained that the CCRSG was in the process of developing goals and objectives on which to base the design of MPA alternative proposals framed by the goals of the MLPA. Although this discussion is still ongoing for the CCRSG, Ugoretz read the goals and objectives in their most recently revised format. The SAT was then asked to comment on both the objectives themselves and how the objectives might impact the way the SAT evaluated alternative proposals. In particular, the CCRSG was requesting help to develop measurable indicators to determine if the objectives would be met by a proposal. John Ugoretz also explained that some objectives were likely to become “design considerations” which must be considered when developing proposals, but do not require a measurable indicator.

CCRSG goals and objectives discussed were:

Goal 1. To protect the natural diversity and abundance of marine life, the structure, function, and integrity of marine ecosystems.

- Obj1. Protect areas of high species diversity and maintain species diversity and abundance, consistent with natural fluctuations, of populations in representative habitats.
- Obj2. Protect areas with diverse habitat types in close proximity to each other.
- Obj3. Maintain natural size and age structure and genetic diversity of populations in representative habitats.
- Obj4. Maintain natural trophic structure and food webs in representative habitats.
- Obj5. Maintain ecosystem structure, function, integrity and ecological processes to facilitate recovery of natural communities from perturbations both natural and human-induced.

Goal 2. To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.

- Obj1. Help protect or rebuild populations of rare, threatened, endangered, depleted, or over fished species, where identified, and the habitats and ecosystem functions upon which they rely.
- Obj2. Protect larval sources and enhance reproductive capacity of species most likely to benefit from MPAs through retention of large, mature individuals.
- Obj3. Protect selected species and the habitats on which they depend while allowing the harvest of migratory, highly mobile, or other species where appropriate through the use of state marine conservation areas and state marine parks.

Goal 3. To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbances, and to manage these uses in a manner consistent with protecting biodiversity.

- Obj1. Ensure some MPAs, including state marine reserves, are close to population centers, research and education institutions, and traditional non-consumptive recreational use and are accessible for recreational, educational, and study opportunities. [Work group version included here - all are pretty similar.]
- Obj2. To the extent possible, provide replicate state marine reserves to function as reference areas for research and monitoring to assess impacts of human use activities and natural events. [Proposed editorial revision - Similar types of marine habitats and communities shall be replicated, to the extent possible, in more than one state marine reserve as reference areas for research and monitoring to assess impacts of human use activities and natural events.]

- Obj3. Develop collaborative scientific monitoring and research projects evaluating MPAs that link with classroom science curricula, volunteer dive programs, and fishermen of all ages, and identify participants.
- Obj4. Protect or enhance recreational experience by ensuring natural size and age structure of marine populations for observation, photography, and other non-consumptive uses. [Proposed for deletion.]
- Obj5. Improve public outreach related to MPAs through the use of docents, improved signage, and production of an educational brochure for central coast MPAs.

Goal 4. To protect marine natural heritage, including protection of representative and unique marine life habitats in central California waters, for their intrinsic value.

- Obj1. Identify and protect unique habitats, such as estuaries, heads of submarine canyons, pinnacles, upwelling centers, and larval retention areas for their intrinsic value. [Proposed editorial revision - Identify and protect unique habitats for their intrinsic value.]
- Obj2. Protect representatives of all marine habitats identified in the MLPA or the Master Plan Framework across a range of depths for their intrinsic value.

Goal 5. To ensure that central California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines.

- Obj1. For each MPA, develop objectives, a long-term monitoring plan that includes standardized biological and socioeconomic monitoring protocols, and a strategy for MPA evaluation, and ensure that each MPA objective is linked to one or more regional objectives. [Proposed revision: "For all MPAs in the region....]
- Obj2. In developing alternative MPA proposals, consider existing state and federal programs, including but not limited to those related to water quality, fisheries management, species recovery, and those of the Monterey Bay National Marine Sanctuary.
- Obj3. To the extent possible, site MPAs adjacent to terrestrial federal, state, county, or city parks, marine laboratories, or other "eyes on the water" to facilitate management, enforcement, and monitoring. [Proposed as design consideration.]
- Obj4. If necessary, phase the implementation of central coast MPAs to ensure their effective management, monitoring, and enforcement. [Proposed deletion; refer to BRTF.]
- Obj5. To the extent possible, site MPAs to facilitate use of volunteers to assist in monitoring and management. [Proposed design consideration.]
- Obj6. To the extent possible, site MPAs to take advantage of existing long-term monitoring studies. [Proposed design consideration.]
- Obj7. Develop regional management and enforcement measures, including cooperative enforcement agreements, adaptive management, and jurisdictional maps, which can be effectively used, adopted statewide, and periodically reviewed.

- Obj8. To the extent possible, design MPAs boundaries that facilitate ease of public recognition and ease of enforcement.
- Obj9. To the extent possible, effectively utilize scientific guidelines in the Master Plan Framework, including size and spacing of MPAs, in the overall design of individual MPAs.
- Obj10. Secure funding for monitoring, management, and enforcement before adequate implementing any new MPAs. [Proposed edit out "adequate implementing any new MPAs"; proposed deletion; refer to BRTF.]

Goal 6. To ensure that the Central Coast's MPAs are designed and managed, to the extent possible, as a component of a statewide network.

- Obj1. To the extent possible, effectively utilize scientific guidelines in the Master Plan Framework, including those related to size and spacing of MPAs, in the overall design of the central coast MPA network component.
- Obj2. Develop a regional review and evaluation of implementation effectiveness to determine if regional MPAs are an effective component of a statewide network
- Obj3. Develop a mechanism to coordinate with future MLPA regional stakeholder groups in other regions to ensure that the statewide MPA network meets the goals of the MLPA.

Ugoretz then opened the topic to general discussion by SAT members. Major points included:

- How is the CCRSG defining the terms "natural size" and "age structure" since they are used several times in the objectives? (It was suggested there was an underlying assumption that just by not removing a species the natural structures will be maintained.) Suggestion that this phrase was limiting as an objective.
- Request to develop measurable indicators to evaluate existing MPAs, plan for future MPAs, and long-term monitoring of future MPAs.
- How will the target values for measurable indicators be established?
- Suggestion that desirable trajectories rather than specific values be established for measurable indicators. Trajectories might be compared before and after MPA implementation or between an MPA and a reference site.
- Clarification that MPA alternative proposals will likely include existing MPAs.
- Goal 4 – Intrinsic value is impossible to measure. A footnote should be included to emphasize that this value is without regard to economic value or perhaps there should be parallel objectives for economic and intrinsic value. (SAT members recruited to work on language for this goal.)
- Goal 3 – Related objectives having to do with access can be measured in many ways (e.g. parking availability, entry fees, distance).
    - Obj1. How will distance be measured?

  - Obj2. Replicates of all types of MPAs and some non-MPA areas are required to allow for scientifically rigorous studies if certain comparisons (such as between fishing gear types) are desired. How many replicates are necessary?
  - Obj3. – Are all programs weighted equally?
  - Obj4. Should be explicit about measurable attributes to determine if recreational enjoyment is enhanced. Reminder that the MLPA lists recreational fishing as a recreational activity to be enhanced by MPAs.
  - Obj5. Accessibility of programs to demographic sectors of various cultural, language, economic, etc. backgrounds is important.
- Goal 1 – objectives 3-5 include the word "maintain" but do not define what is meant by the term. Suggestion that because only human behavior is being managed, it is only appropriate to talk about maintaining certain human activities, not maintaining the ecosystem or its inhabitants.
- Emphasis that there should be strong agreement between CCRSG's goals and objectives and the MPA proposal evaluation criteria.
- Need to define "minimal human disturbance".
- Since trophic cascades will likely cause a decrease in some species along with increases in others, how will the key indicator species be chosen? This is especially important because species on the species likely to benefit list are expected to increase.
- How do you empirically demonstrate that an MPA network is functioning in terms of larval transport?
- Are the objectives meant to apply to individual MPAs or groups of MPAs? (Suggestion that MPAs should meet all objectives collectively but not necessarily on an individual basis.)
- Will the CCRSG goals and objectives set the standards for the rest of the state?
- Use of models should be included in objectives especially when determining desirable trajectories of measurable indicators.
- Considering water quality at proposed MPA sites should be included as a design consideration.
- SAT will only be able to use objectives with measurable indicators when evaluating proposals and can suggest datasets helpful for such evaluation.
- It might be important to measure a variety of other environmental and human-induced factors to explain changes in measurable indicators.
- Request to consider if goal 1, objective 5 is measurable.

The discussion closed with the idea that feedback on the CCRSG goals and objectives would be iterative between the CCRSG and SAT.

**MPA Evaluation**

John Kirlin opened the discussion by reminding the SAT that the product of the MLPA Initiative is the identification and valuing of alternative MPA proposals for consideration by the BRTF, DFG, and Fish and Game Commission in turn. The process does not have to yield a single proposal or even a series of ranked proposals, but all proposals must be clearly understood and evaluated.

John Kirlin presented a spreadsheet in which the targeted activities for the SAT in relation to the MLPA Central Coast Project are designated by month as follows:

- October 2005: SAT will complete science presentations to BRTF and CCRSG. In addition, SAT will review MPA inventory developed by CCRSG.
- November 2005: First evaluation of MPA packages developed by CCRSG
- December 2005: Second evaluation of MPA packages developed by CCRSG

Astrid Scholz gave an update from the MPA Evaluation Sub-Team based on the major points in a recent memo:

- <u>How we got to where we are</u>

  Placeholder proposal was developed to identify logistical and analytical needs, which are as follows:
  - On-demand GIS capacity
  - A way to assess network characteristics or proposal alternatives
  - A way to assess multiple and potentially conflicting objectives
- <u>The evaluation task at hand</u>
  - Evaluating multiple objectives for each alternative proposal
  - Considering what weight to give objectives in proposals
  - Evaluating different mixtures of several MPA types (including no MPAs)
  - How to come up with a scientific standard for evaluating proposals
  - Anticipate that the CCRSG will likely look to the SAT for additional information particularly concerning the geodatabase
- <u>Why new tools?</u>
  - To develop a yardstick for evaluating proposals rather than relying on comparisons between proposals
  - The standard in other similar planning processes has been to use spatial modeling methods to design MPA alternatives instead of just evaluating proposals
  - Evaluation of existing modeling tools

- How do these pieces relate to each other and on-going efforts?
    - Flowchart presented indicated that the CCRSG will design alternatives using the IMSG tool while the SAT will evaluate the alternatives using its own tool(s). All tools will likely rely on the geodatabase housed at UCSB.

Kirlin followed up by mentioning three existing contracts with SAT members:

- Contract for UCSB data management and presentation via a geodatabase
- Contract with Ecotrust to increase spatial resolution of fishing effort data
- Contract for follow-up on a socio-economic study

He then added that official guidelines for entering into contracts with SAT members should be established, although no existing contracts represented any conflicts of interest.

John Kirlin moved the discussion to networks by reminding the SAT that although "networks" are key to the MLPA, the term is not defined in the act itself. The BRTF has advised to not unnecessarily limit what the term means. He then suggested that there are several dimensions relevant to the idea of networks:

- A managerial approach to defining networks
- Monitoring and evaluating MPA networks
- Networks of ecosystems
- Connectivity in networks via larval dispersal
- Adult neighborhoods and ranges as they pertain to networks
- Life stages across habitats as a network
- Networks of oceanographic features

John Kirlin followed by suggesting that it's important to think about not only what these dimensions mean, but also how they will be measured and incorporated in network design. He then opened the discussion to receive comments from the SAT.

SAT members reiterated that it will be important to come up with a list of definitions for "network" given the variety of dimensions above. One example definition is from the National Research Council's book on MPAs which defines networks in terms of larval connectivity. It was proposed that these definitions could be included in the upcoming SAT presentation about MPA design. It was also suggested that how stakeholders think about networks will be important when it comes to evaluating MPA proposals. The SAT and CCRSG should communicate to each other what is meant by "networks." It was reiterated that it will be the job of the SAT to evaluate both individual MPAs and MPA networks in terms of the CCRSG goals and objectives. Existing MPAs will likely be part of the proposals so they will also be evaluated. However, the only objectives that currently address networks are under goal 6. It was suggested that evaluation criteria for network efficacy be based on likelihoods rather than expecting measurable attributes.

John Kirlin finished the discussion by mentioning that there is currently an MLPA Initiative contract to summarize literature on networks and that he would collect further feedback on this topic and circulate for discussion next time. He then introduced Satie Airame as the Policy and Outreach Coordinator for the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO).

Satie Airame outlined the MPA planning process from the Channel Islands and compared it to the MLPA. She began by saying that although the Channel Islands process was different in size and scale from the MLPA, it did have a science advisory team and a stakeholders group. The stakeholders were responsible for developing the goals and objectives and having these strong from the beginning proved to be critical. This was especially true concerning clear definitions of terms used in the goals and objectives. The scientists then developed measurable criteria to analytically determine if the MPA designs met the goals and objectives. Important things for the SAT to consider include:

- How to evaluate different types of MPAs such as reserves, parks, and conservation areas in terms of meeting goals and objectives?
- In the Channel Islands, ecological and economic data were analyzed separately. Tools were used to parse data into evaluation planning units that were included in MPA designs.
    - Examples of ecological data are locations of biological diversity hotspots and species of special concern.
    - For economic data, the potential cost of closing each planning unit to extraction was calculated. Suggestion to also consider things like changes in behavior and displaced effort for the MLPA process.
- Monitoring is just as important as evaluation to determine if expected outcomes will occur. She suggested a book on modeling tools titled, *Place Matters: Geospatial Tools for Marine Science, Conservation, and Management in the Pacific Northwest* (Eds. Dawn J. Wright and Astrid J. Scholz).

Satie Airame finished by saying that the Channel Islands process produced five official MPA proposals plus a no-action option after about eight months of iteration between the stakeholders and the scientists. The adopted design was a compromise between proposals. She reiterated that it is a policy decision to determine the desired objectives, but science can help develop measurable evaluation criteria.

The SAT wes reminded that the timeline for the central coast study region is shorter and the BRTF could help with reducing the number of proposals for evaluation. Satie Airame emphasized that clear goals and objectives would help to refine proposals and suggested developing an online database containing the attributes of key areas likely to be included in proposals. John Kirlin requested there be at least two rounds of proposal drafting/evaluation for the central coast study region.

John Ugoretz reminded the SAT that the MLPA process has the advantages of being guided by the draft MPF and was designed to produce several alternative proposals to be evaluated

by the SAT, BRTF, DFG, and Fish and Game Commission in turn. He added that the current SAT is paneled until November 2006 and will likely be consulted further along the process as the BRTF and DFG consider the proposals in an adaptive and iterative manner. He ended by saying that some goals and objectives might not have measurable criteria to be evaluated by the SAT and also that the SAT might come up with measurable criteria that are not explicitly in the CCRSG goals and objectives.

Mary Gleason reiterated the request to the SAT to help develop qualitative or quantitative criteria related to goals and objectives. She then gave a presentation on the support tool created to aid the CCRSG in the design of MPA proposals. Major aspects of the tool are as follows:

- Visible data layers are based on readily available data.
- Data layers include information like fisheries data from DFG, habitat mapping, and major geographic features.
- The data are housed at the UCSB geodatabase.
- The tool is designed to be a decision support tool to aid the CCRSG in developing MPA proposals.
- The user can select individual data layers to be viewed and the tool will report on the characteristics of hypothetical MPAs that are drawn by the user.
- Distances will be given in several formats (e.g. kilometers, miles, nautical miles).
- Some data layers can be viewed but will not be included in reports if they are not of sufficient quality. Each data layer will have an abstract describing the data and its limitations.
- There will be a link to this tool on the MLPA website and it will be available to the public in October.
- Users can login as individuals or groups and can save their work privately or make it available for public viewing.
- The tool is supported by the MLPA Initiative, Monterey Bay National Marine Sanctuary (MBNMS), and the National MPA Center. The tool will be used in both the MLPA Initiative and MBNMS planning processes.

Mary Gleason added that the GIS staff will include information about what kind of review has been done of each data layer including caveats or concerns about how the data should be used. SAT members will be asked to review particular layers based on their expertise.

John Kirlin suggested that feedback be directed toward a discussion of data. SAT comments included the following:

- SAT should develop list of minimum types and amounts of data to be included with each MPA proposal (either the CCRSG or MLPA Initiative staff would be responsible for ensuring the appropriate data are included)
- Request for analytical or search capabilities in the tool (response suggested MARXAN as a tool with those capabilities)

- Suggestion to modify pictures on the opening page to include humans and exclude marine mammals
- Include metadata in the visual layers to ensure they are read by the user.
- SAT should develop ranking system for data quality and establish minimum quality standard for acceptable data - should be communicated to the CCRSG as soon as possible as it develops proposals
- Can tools such as MARXAN simultaneously consider economic and ecological data?
- Emphasize that analytical tools will be used by the SAT to evaluate proposals, not develop them, although there will be opportunities to provide feedback about how to improve proposals
- Difficult to determine levels of data accuracy needed to evaluate proposals without knowing how different the proposals will be from each other

**Species Likely to Benefit List**

Doyle Hanan gave an update on the progress of the SAT Species Likely to Benefit Sub-Team. He commended the DFG for putting together the list. He went on to say that although it is assumed that the major impact of an MPA is to reduce the number of fish taken, there are likely a variety of direct and indirect effects such as:

- Direct effects: Changes in abundance of target harvest species
- Indirect effects: Predator-prey relationships, impact of fishing gear

The sub-team worked with a version of the species likely to benefit list put together by Paul Reilly and separated by rocky vs. sandy habitats. The status of the fishery was included if known. The sub-team also developed a list of important considerations for each species on the list:

- Does species occur on the central coast?
- Is species either directly or indirectly affected by fishing?
- Information about species mobility or dispersal
- Does species have a small adult neighborhood size?
- What is the species population trend /stock size or status (if known)?
- Is there a particular life stage that may benefit?
- Does the response of the species depend on location?

Other important questions include:

- What are the effects outside MPAs?
- What are the effects of existing regulations?
- What species may indirectly benefit?
- Is the list complete? Do we need to add or delete species?

John Ugoretz thanked the sub-team for a good start. He then emphasized the importance of putting together a list targeted at the central coast. He noted that all twelve species the sub-team indicated to be of special concern were in rocky habitats.

Comments from SAT members included:

- Will this list serve as a target for the design of some MPAs or just help overall with design and evaluation?
- It is important to clearly define the term "benefit" and where these benefits are expected to occur (e.g. inside vs. outside MPAs).
- What is the targeted scale of species protection (i.e. number of individuals, populations, etc.)? A suggestion was made that modeling could help answer this question.
- It is important to consider species that form critical habitat.
- Should suites of species (e.g. shelled gastropods) be included in the list?
- Species that may indirectly benefit (e.g. birds) should be included in the text of the document but not in the list itself.
- A suggestion was made to designate species likely to benefit that are also of economic importance.

Action items were developed to address some of the comments.

**Request for SAT contributions to CCRSG Regional Profile**

Mary Gleason announced that although the regional profile will remain a living document, the final draft will be finished by September 6. The approved version will be placed in a 3-ring binder so updates can be easily made in the future. She requested help from the SAT to review the document as a whole and also to concentrate on the following topics:

- Maps of oceanographic features
- Maps of retention areas
- Maps of freshwater plumes
- Section 3.3 regarding areas of biodiversity significance

Mary Gleason requested all feedback be emailed to her directly as soon as possible.

**Update on Central Coast Stakeholder Group and Questions**

Mark Carr summarized the agenda and events of the August 10-11, 2005 CCRSG meeting in Monterey. He then asked the SAT to comment on draft answers to science-related questions submitted by the CCRSG and other parties. The major points of the discussion are organized by question:

B-18: *Can coastal closures such as MPAs be as effective as seasonal fishery closures? For instance, the nearshore rockfish fishery—less than 240 feet) is currently closed half the year.*

*What would the required equivalent marine reserves or parks or conservation areas be as a percentage of coast or seafloor?*

- This is really two questions and the response should be removed because it is incomplete.
- Impact of closures on size and age structures are known.

B-20: *Please describe the currents and back eddies within Carmel and Monterey Bay and discuss the implications for larval dispersal.*

- Plan to work with oceanographers to develop a response.

B-23: *What species have produced an unnaturally low amount of larvae and how do we know of those occurrences?*

- Request clarification if this question is aimed at the individual or population level.

B-24: *What factors are depressing clam populations and why do whole areas of previously very productive clam habitat not show recovered clam populations? What factors are similarly depressing abalone and sea otter populations? What is the interrelationship among these three species? What steps could be taken which might benefit populations for all three species?*

- Second paragraph should be modified to consider that humans are likely to have impact.
- Attempt to draw a relationship between abalone and clams is probably not necessary.
- A few individual southern sea otters may exist outside the proscribed range.

B-25: *What baseline or other factors would influence any increase or decrease in economic value for non-consumptive uses due to the establishment of new MPAs?*

- This answer should include something about biological performance.

B-26: *How and to what extent have increased regulations and area closures, both state and federal, contributed to an increase in biodiversity and/or size and abundance?*

- The answer is correct for rebuilding plans in general, but there may not be a study about the efficacy of area closures in particular.
- Answer doesn't appropriately respond to the question.

B-29: *Do we have evidence that sea otters limit the fishery for Dungeness crab?*

- Response should reflect that while there are no data for California, studies from Alaska are being pursued.

B-30: *What can you tell us about how to select sites for MPAs so as to optimize its value and maximize its socio-economic benefits?*

- Answer to this question should be modified to match the response already issued to the CCRSG members.

Revised responses to all questions will be issued at the September 7-8, 2005 CCRSG meeting.

**Public Comment**

A single individual made the following points:

- Suggestion that some answers to CCRSG questions be reviewed by someone with legal expertise
- Strong support for goal 3, objective 2 although it does not have to remain under goal 3
- Urge SAT to consider the economic value of species outside of fishing values

**Upcoming Meetings**

The next SAT meeting will be held on Monday, September 19, 2005 in Santa Cruz, CA.